

IN THE CLAIMS:

Please amend claims 1, 4, 13, 20 and 21, and add new claims 22-28 as follows.

1. (Currently amended) A display assembly with two superposed contrast inversion display devices, the assembly including:

_____ a first display device; and

_____ a second active display device having a double structure, one structure being formed by a first contrast inversion display device provided by a twisted nematic liquid crystal dot matrix display cell or by a digit twisted nematic liquid crystal display cell, the liquid crystals of the one structure being confined in a space delimited by two transparent substrates and having two switching states, and the other structure being formed by a second contrast inversion display device provided by a twisted nematic liquid crystal optical valve, the liquid crystals of the other structure being confined in a space delimited by two transparent substrates and having at least two switching states and control means allowing an appropriate voltage to be selectively applied to the display cell and optionally to all or part of the valve to cause each liquid crystal to switch from one state to another, wherein the second active display includes only two polarisers such that a first absorbent or reflective front polariser is arranged at the front of the display cell and in that a second back polariser, crossed with the front polariser or parallel thereto, is arranged at the back of the valve so that when the display cell is switched to display at least one item of data, the total or partial switching of the valve, from one state to another, inverts the contrast of the data displayed from a light appearance to a dark appearance or vice versa, wherein the first display device has a dark shade and the back polariser is a reflective polariser, and wherein the first contrast inversion display device and the second contrast inversion display device are superposed.

2. (Previously presented) A display assembly according to claim 1, wherein the switching of the valve from one state to another also allows either the first display only to be made visible, or

for the first display to be totally hidden by a mirror mask or by a black mask when the display cell is not switched.

3. (Original) A display assembly according to claim 1, wherein the valve includes at least two distinct zones with opposite switching mode, so that two types of data of the second display can be observed with a contrast inversion.

4. (Currently amended) A display assembly according to claim 1, wherein the twisted nematic liquid crystals of said display assembly ~~have are~~ ~~twisted nematic liquid crystals with either positive or negative anisotropy, and which~~ may be identical or different in the display cell and in the valve.

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Previously presented) A display assembly according to claim 1, wherein the first display device is selected from among an analogue device, a digital device, a combination of an analogue device and a digital device, and a decorative element.

9. (Previously presented) A display assembly according to claim 20, wherein the digital part of the first display device and the second display device have the same structure.

10. (Previously presented) A timepiece including a case closed by a crystal and a back cover in which a clockwork movement associated with at least one display device is housed,

characterized in that said display device is formed by a display assembly according to claim 1, said first display device essentially displaying time related data and said second display device displaying time related data complementary to the preceding data or non time related data of sensor systems, or alphanumerical processing systems, integrated in the case of the timepiece.

11. (Original) A timepiece according to claim 10, wherein said first display device includes a dial above which move an hour hand, a minute hand and a second hand.

12. (Previously presented) A timepiece according to claim 10, wherein the second display is combined with the crystal.

13. (Currently amended) A display assembly with two superposed contrast inversion display devices, the display assembly including:

_____ a first display device; and

_____ a second active display device having a double structure, one structure being formed by a first contrast inversion display device provided by a twisted nematic liquid crystal dot matrix display cell or by a twisted nematic digit liquid crystal display cell, the liquid crystals of the one structure being confined in a space delimited by two transparent substrates and having two switching states, and the other structure being formed by a second contrast inversion display device provided by a twisted nematic liquid crystal optical valve, the liquid crystals of the other structure being confined in a space delimited by two transparent substrates and having at least two switching states and control means allowing an appropriate voltage to be selectively applied to the display cell and optionally to all or part of the valve to cause each liquid crystal to switch from one state to another, wherein the second active display includes only two polarisers such that a first absorbent or reflective front polariser is arranged at the front of the display cell and in that a second back polariser, crossed with the front polariser or parallel thereto, is arranged at the back of the valve so that when the display cell is switched to display at least one item of data, the total or partial switching of the valve,

from one state to another, inverts the contrast of the data displayed from a light appearance to a dark appearance or vice versa, wherein the first display device has a light shade and the back polariser is an absorbent polariser, and wherein the first contrast inversion display device and the second contrast inversion display device are superposed.

14. (Previously presented) A display assembly according to claim 13, wherein the switching of the valve from one state to another also allows either the first display only to be made visible, or for the first display to be totally hidden by a mirror mask or by a black mask when the display cell is not switched.

15. (Previously presented) A display assembly according to claim 13, wherein the valve includes at least two distinct zones with opposite switching mode, so that two types of data of the second display can be observed with a contrast inversion.

16. (Previously presented) A display assembly according to claim 13, wherein the liquid crystals of said display assembly are twisted nematic liquid crystals with either positive or negative anisotropy, which may be identical or different in the display cell and in the valve.

17. (Canceled)

18. (Previously presented) A display assembly according to claim 13, wherein the first display device is selected from among an analogue device, a digital device, a combination of an analogue device and a digital device, and a decorative element.

19. (Previously presented) A display assembly according to claim 21, wherein the digital part of the first display device and the second display device have the same structure.

20. (Currently amended) A display assembly with two superposed contrast inversion display devices, the display assembly including:

a first display device; and

a second active display device having a double structure, one structure being formed by a first contrast inversion display device provided by a twisted nematic liquid crystal dot matrix display cell or by a digit twisted nematic liquid crystal display cell, the liquid crystals of the one structure being confined in a space delimited by two transparent substrates and having two switching states, and the other structure being formed by a second contrast inversion display device provided by a twisted nematic liquid crystal optical valve, the liquid crystals of the other structure being confined in a space delimited by two transparent substrates and having at least two switching states and control means allowing an appropriate voltage to be selectively applied to the display cell and optionally to all or part of the valve to cause each liquid crystal to switch from one state to another, wherein a first absorbent or reflective front polariser is arranged at the front of the display cell and in that a second back polariser, crossed with the front polariser or parallel thereto, is arranged at the back of the valve so that when the display cell is switched to display at least one item of data, the total or partial switching of the valve, from one state to another, inverts the contrast of the data displayed from a light appearance to a dark appearance or vice versa, wherein the first display device has a dark shade and the back polariser is a reflective polariser, and wherein the first contrast inversion display device and the second contrast inversion display device are superposed, and the transparent substrates opposite the display cell and the valve are combined in a single transparent substrate.

21. (Currently amended) A display assembly with two superposed contrast inversion display devices, the display assembly including:

a first display device; and

a second active display device having a double structure, one structure being formed by a first contrast inversion display device provided by a twisted nematic liquid crystal dot matrix display cell or by a digit twisted nematic liquid crystal display cell, the liquid crystals of the one

structure being confined in a space delimited by two transparent substrates and having two switching states, and the other structure being formed by a second contrast inversion display device provided by a twisted nematic liquid crystal optical valve, the liquid crystals of the other structure being confined in a space delimited by two transparent substrates and having at least two switching states and control means allowing an appropriate voltage to be selectively applied to the display cell and optionally to all or part of the valve to cause each liquid crystal to switch from one state to another, wherein a first absorbent or reflective front polariser is arranged at the front of the display cell and in that a second back polariser, crossed with the front polariser or parallel thereto, is arranged at the back of the valve so that when the display cell is switched to display at least one item of data, the total or partial switching of the valve, from one state to another, inverts the contrast of the data displayed from a light appearance to a dark appearance or vice versa, wherein the first display device has a light shade and the back polariser is an absorbent polariser, and wherein the first contrast inversion display device and the second contrast inversion display device are superposed, and the transparent substrates opposite the display cell and the valve are combined in a single transparent substrate.

22. (NEW) A display assembly according to claim 1, wherein the back polariser is crossed with the front polariser, the display cell and the optical valve both have positive anisotropy or both have negative anisotropy, and wherein the at least two switching states comprise:

a first switching state wherein the display cell is switched OFF and the optical valve is switched OFF, and the first display device is hidden by a mirror mask;

a second switching state wherein the display cell is switched ON and the optical valve is switched OFF so a portion of the first display device is seen through a transparent window and the display cell shows data in the dark shade on a light background;

a third switching state wherein the display cell is switched OFF and the optical valve is switched ON so that only the first display device is seen; and

a fourth switching state wherein the display cell is switched ON and the optical valve is switched ON so the first display device is seen and the display cell shows data in a light color on a dark background.

23. (NEW) A display assembly according to claim 1, wherein the back polariser is parallel to the front polariser, the display cell and the optical valve both have positive anisotropy or both have negative anisotropy, and wherein the at least two switching states comprise:

a first switching state wherein the display cell is switched OFF and the optical valve is switched OFF so that only the first display device is seen;

a second switching state wherein the display cell is switched ON and the optical valve is switched OFF so the first display device is seen and the display cell shows data in a light color on a dark background;

a third switching state wherein the display cell is switched OFF and the optical valve is switched ON, and the first display device is hidden by a mirror mask; and

a fourth switching state wherein the display cell is switched ON and the optical valve is switched ON so a portion of the first display device is seen through a transparent window and the display cell shows data in the dark shade on a light background.

24. (NEW) A display assembly according to claim 13, wherein the back polariser is crossed with the front polariser, the display cell and the optical valve both have positive anisotropy or both have negative anisotropy, and wherein the at least two switching states comprise:

a first switching state wherein the display cell is switched OFF and the optical valve is switched OFF, and the first display device is hidden by a black mask;

a second switching state wherein the display cell is switched ON and the optical valve is switched OFF so a portion of the first display device is seen through a transparent window and the display cell shows data in the light shade on a dark background;

a third switching state wherein the display cell is switched OFF and the optical valve is switched ON so that only the first display device is seen; and

a fourth switching state wherein the display cell is switched ON and the optical valve is switched ON so the first display device is seen and the display cell shows data in a dark color on a light background.

25. (NEW) A display assembly according to claim 13, wherein the back polariser is parallel to the front polariser, the display cell and the optical valve both have positive anisotropy or both have negative anisotropy, and wherein the at least two switching states comprise:

a first switching state wherein the display cell is switched OFF and the optical valve is switched OFF so that only the first display device is seen;

a second switching state wherein the display cell is switched ON and the optical valve is switched OFF so the first display device is seen and the display cell shows data in a dark color on a light background;

a third switching state wherein the display cell is switched OFF and the optical valve is switched ON, and the first display device is hidden by a black mask; and

a fourth switching state wherein the display cell is switched ON and the optical valve is switched ON so a portion of the first display device is seen through a transparent window and the display cell shows data in the light shade on a dark background.

26. (NEW) A display assembly according to claim 1, wherein the back polariser is crossed with the front polariser, the display cell has negative anisotropy and the optical valve has positive anisotropy, and wherein the at least two switching states comprise:

a first switching state wherein the display cell is switched OFF and the optical valve is switched OFF so that only the first display device is seen;

a second switching state wherein the display cell is switched ON and the optical valve is switched OFF so the first display device is seen and the display cell shows data in a light color on a dark background;

a third switching state wherein the display cell is switched OFF and the optical valve is switched ON, and the first display device is hidden by a mirror mask; and

a fourth switching state wherein the display cell is switched ON and the optical valve is switched ON so a portion of the first display device is seen through a transparent window and the display cell shows data in the dark shade on a light background.

27. (NEW) A display assembly with two superposed contrast inversion display devices, the assembly including:

a first display device; and

a second active display device having a double structure, one structure being formed by a first contrast inversion display device provided by a liquid crystal dot matrix display cell or by a digit liquid crystal display cell, the liquid crystals of the one structure being confined in a space delimited by two transparent substrates and having two switching states, and the other structure being formed by a second contrast inversion display device provided by a liquid crystal optical valve, the liquid crystals of the other structure being confined in a space delimited by two transparent substrates and having at least two switching states and control means allowing an appropriate voltage to be selectively applied to the display cell and optionally to all or part of the valve to cause each liquid crystal to switch from one state to another, wherein the second active display includes only two polarisers such that a first absorbent or reflective front polariser is arranged at the front of the display cell and in that a second back polariser, crossed with the front polariser or parallel thereto, is arranged at the back of the valve so that when the display cell is switched to display at least one item of data, the total or partial switching of the valve, from one state to another, inverts the contrast of the data displayed from a light appearance to a dark appearance or vice versa, wherein the first display

device has a dark shade and the back polariser is a reflective polariser, and wherein the first contrast inversion display device and the second contrast inversion display device are superposed.

28. (NEW) A display assembly with two superposed contrast inversion display devices, the assembly including:

a first display device; and

a second active display device having a double structure, one structure being formed by a first contrast inversion display device provided by a liquid crystal dot matrix display cell or by a digit liquid crystal display cell, the liquid crystals of the one structure being confined in a space delimited by two transparent substrates and having two switching states, and the other structure being formed by a second contrast inversion display device provided by a liquid crystal optical valve, the liquid crystals of the other structure being confined in a space delimited by two transparent substrates and having at least two switching states and control means allowing an appropriate voltage to be selectively applied to the display cell and optionally to all or part of the valve to cause each liquid crystal to switch from one state to another, wherein the second active display includes only two polarisers such that a first absorbent or reflective front polariser is arranged at the front of the display cell and in that a second back polariser, crossed with the front polariser or parallel thereto, is arranged at the back of the valve so that when the display cell is switched to display at least one item of data, the total or partial switching of the valve, from one state to another, inverts the contrast of the data displayed from a light appearance to a dark appearance or vice versa, wherein the first display device has a light shade and the back polariser is an absorbent polariser, and wherein the first contrast inversion display device and the second contrast inversion display device are superposed.